REMARKS

By the present amendment, independent claim 1 has been amended to further clarify the concepts of the present invention. Among other things, independent claim 1 has been amended to incorporate the subject matter of dependent claim 9 therein. Consequently, dependent claim 9 has been canceled.

In particular, claim 1 has been amended to specify the thickness of the thermoplastic resin film layer, and also to recite that the surface electrical resistance of the toner receiving layer is 1×10^5 to 1×10^9 Ω/□. Support for the recitation as to the thickness of the thermoplastic resin film layer may be found, among other places, in the paragraph bridging pages 8 and 9 of the specification. Support for the recitation as to surface electrical resistance may be found in original claim 9 and in the second full paragraph on page 16 of the specification.

It is submitted that these amendments to claim 1 are helpful in distinguishing the subject claims over the cited prior art and do not raise new issues which would require further consideration and/or search. In addition, it is submitted that such amendments place the application in better form for appeal by materially reducing or simplifying the issues for appeal. Furthermore, no additional claims are presented without cancelling a corresponding number of finally rejected claims. In view of the above, it is submitted that

entry of the above amendments is in order and such is respectfully requested.

In the Office Action, claims 1 and 5-9 were rejected under 35 USC § 103(a) as being unpatentable over the patent to Majumdar et al in view of the patent publications to Aylward et al, Asaka et al, Shikano et al and Sakamoto et al. In making this rejection, it was asserted that the patent to Majumdar et al, in conjunction with the patent to Aylward et al which is cited therein, teach an electrophotographic imaging material comprising a coated paper substrate with an image receiving layer. It was acknowledged that these patents do not teach the claimed composition of the image receiving layer nor the claimed stiffness.

It then was asserted that the Asaka et al patent teaches the composition of the image receiving layer by disclosing particles of antimony-doped tin oxide, and the Shikano et al publication discloses imaging material having the stiffness as claimed. It was then asserted that the Sakamoto et al patent teaches the use of conductive acicular titanium dioxide particles of the size claimed which are coated with antimony-doped tin oxide. It was concluded that it would be obvious to combine the teachings of the cited publications to produce the electrophotographic transfer sheet as claimed. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

It is submitted that independent claim 1 as amended as well as claims 5-8 depending thereon, are not taught or suggested by the cited publications to the Majumdar et al, Aylward et al, Asaka et al, and Shikano et al, whether taken singly or in combination. Among other things, these publications do not teach an electrophotographic transfer sheet as presently claimed having a toner receiving layer with a surface electrical resistance of 1×10^5 to 1×10^9 Ω/□. This surface electrical resistance feature of the toner receiving layer of the electrophotographic transfer sheet is important for the proper function of the transfer sheet.

Specifically, if the surface electrical resistance of the toner receiving layer is relatively low, in particular, lower than 1×10^5 Ω/□, the electrostatic capacity of the toner receiving layer becomes low, the tendency of escapement of the surface charge becomes high, and the charge on the surface opposite to the charge of the toner tends to polarize. Further, as escapement of the surface charge occurs, the amount of electric charge will be reduced, which leads to incapability of the neutralization of the toner charge. As a result, the transfer efficiency of the toner from the photoceptor to the toner receiving layer by means of a coulomb force becomes low, leading to a lack of dense uniformity.

For the reasons set forth above, in general, it might be considered preferable to set the surface electrical resistance of toner receiving layer in a conventional electrophotographic transfer sheet at a relatively high value such as, for example, above

at least 1 x 10^9 Ω/□. However, applicants herein have discovered that, in an electrophotographic transfer sheet having the characteristics as recited in amended claim 1, if the surface electric resistance of the toner receiving layer becomes too high, the image quality becomes poor.

This effect can be recognized by comparing the results of the image quality shown in Tables 2 and 3 in the subject specification for electrophotographic transfer sheets according to Examples 2 and 4. In particular, as shown in Table 2, the electrophotographic transfer sheet of Example 4 has a surface electrical resistance higher than that of the sheet according to Example 2. However, from the results of the image quality for the electrophotographic transfer sheets according to Examples 2 and 4 as shown in Table 3, the image quality of the sheet of Example 4 is inferior to that of the sheet of Example 2.

It can be concluded from the above that if the surface electrical resistance is too high, in particular, higher than 1 x 10^9 Ω/□, the electrostatic capacity of the toner receiving layer becomes high, and the charge of the toner will be retained on the surface of the toner receiving layer. In a high density image, the toner being newly transferred thereon will assume a charge which has the same polarity as that of the charge of the preexisting toner. As a result, in a high density image, the transfer efficiency of the toner becomes low, and thereby a good image cannot be obtained.

Therefore, in order to enhance the transfer efficiency of the toner, the charge of the toner retained on the surface of the toner receiving layer needs to be grounded to the printer conveying roll or discharging brush. However, in the transfer sheet of the present invention having the thermoplastic resin film layer (A), in comparison to a conventional electrophotographic sheet having a surface electrical resistance over 1×10^9 and up to 1×10^{13} Ω/□, the charge of the surface of the toner receiving layer tends to be retained thereon. Therefore, the resistance of the presently claimed electrophotographic transfer sheet is set to be within a specified range of values, i.e., between 1×10^5 to 1×10^9 Ω/□.

It is submitted that none of the cited patent publications teach or suggest an electrophotographic transfer sheet of the presently claimed invention having the surface electrical resistance of the toner receiving layer to the specified range of 1×10^5 to 1×10^9 Ω/□. Further, none of the patent publications teach or suggest an electrophotographic transfer sheet of the presently claimed invention having the features specified in amended claim 1 which include, among others, incorporation of a specified conductive material in the toner receiving layer, in combination with the specified stiffness and the specified surface electrical resistance of the toner receiving layer. Such an electrophotographic transfer sheet exhibits remarkable advantages such as having stable surface electrical resistance values in a wide range of environments from low temperature and low humidity to high temperature and high humidity, having excellent toner transfer properties, high image density and high quality images, tending to avoid paper jamming during ejection due

to heat curling, and preventing fusion of the transfer sheets or paper breaks at the fixing heat roller, while preventing water-immersed paper tears or distortions and toner peeling.

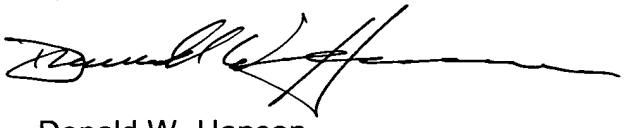
For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1 and 5-8 as amended over the cited patent publications are respectfully requested.

In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP



Donald W. Hanson
Attorney for Applicants
Reg. No. 27,133

Atty. Docket No. 040019
Suite 1000, 1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930
DWH/rab

23850
PATENT TRADEMARK OFFICE